REMARKS

The Official Action dated July 19, 2004 has been carefully considered. Accordingly, the changes presented herewith, taken with the following remarks, are believed sufficient to place the present application in condition for allowance. Reconsideration is respectfully requested.

By the present Amendment, claims 25-27 and 29 are canceled and claims 32-36 are added. Claims 32-34 and 36 contain limitations from previous claims 25-27 and 29, respectively. Claim 35 contains limitations from previous claim 28. It is believed that these changes do not involve any introduction of new matter, whereby entry is believed to be in order and is respectfully requested.

In the Official Action, the Examiner indicated that claims 25-27 and 29 were objected to as being dependent upon rejected claims. As new claims 32-34 and 36 contain limitations from previous claims 25-27 and 29, respectively, it is believed that these claims are in prima facie condition for allowance. Reconsideration is respectfully requested.

In the Official Action, claims 28, 30 and 31 were rejected under 35 U.S.C. §103(a) as being unpatentable over the Ferreira et al publication "Dissection of Immunoglobulin E and T Lymphocyte Reactivity of Isoforms of the Major Birch Pollen Allergen Bet v 1: Potential Use of Hypoallergenic Isoforms for Immunotherapy" in view of the Patterson et al U.S. Patent No. 4,269,764 and the Eisenbach-Schwartz et al U.S. Patent No. 6,126,939. The Examiner asserted that Ferreira et al teach the use of recombinantly produced non-anaphylactic Bet v 1 proteins in the treatment of Bet v 1 allergy. The Examiner relied on Patterson et al as teaching that the polymerization of allergens produces immunogenic allergens that have markedly reduced allergenicity and on Eisenbach-Schwartz et al as teaching immunogens

comprising polymers of peptides linked by a hydrophilic oligopeptide linker to treat or ameliorate inflammation associated with allergic reactions. The Examiner concluded that it would have been obvious to polymerize the allergen taught by Ferreira et al and to use peptide linkers as taught by Eisenbach-Schwartz et al.

However, Applicants submit that the immunogens defined by claims 28, 30 and 31 are nonobvious over and patentably distinguishable from the cited combination of Ferreira et al, Patterson et al and Eisenbach-Schwartz et al. Accordingly, this rejection is traversed and reconsideration is respectfully requested.

More particularly, as defined by claim 28, the immunogen according to the present invention is derived from Bet v 1 protein allergen and comprises (a) a non-anaphylactic immunogenic recombinant fragment of the protein allergen, the fragment comprising an IgG epitope and an IgE epitope of the protein allergen partly but not completely overlapping; (b) a polymeric form of the fragment, in which form the fragment constitutes the monomeric units, wherein the monomeric units are separated from each other by an oligopeptide linker; or (c) a non-anaphylactic recombinant polymeric form of the protein allergen having 2 to 10 monomeric units in which the protein allergen constitutes the monomeric units, wherein the monomeric units are separated from each other by an oligopeptide linker.

Ferreira et al describe their study of T cell activation potency and IgE binding properties of nine isoforms of Bet v 1, namely Bet v 1a-Bet v 1l. Ferreira et al propose allergy treatment with high doses of hypoallergenic isoforms or recombinant variants of atopic allergens, on the assumption that such would modulate the quality of the T helper cell response to allergens in vivo and the therapy form would additionally implicate a reduced risk of anaphylactic side effects.

However, Applicants find no teaching or suggestion by Ferreira et al relating to any of the immunogenic forms defined by (a), (b) or (c) of claim 28. Moreover, while the Examiner asserts that polymerization, presumably to provide components (b) or (c), would have been obvious in view of Patterson et al and Eisenbach-Schwartz et al, Applicants submit that such a combination is apparent only in view of the teachings of the present specification.

In this regard, Applicants note that Patterson et al disclose ragweed allergens polymerized with glutaraldehyde to produce water-soluble polymers of molecular weights from 200,000 to 20 million. Applicants find no teaching or suggestion by Patterson et al relating to birch pollen allergens, relating to the use of a non-anaphylactic recombinant fragment, or relating to a polymeric form having 2 to 20 monomeric units. In fact, Applicants find no teaching by Patterson et al relating to the number of monomeric units in their polymers. Thus, the immunogens (a), (b) and (c) would not have been suggested to one of ordinary skill in the art familiar with Ferreira et al in view of the teachings of Patterson et al relating to ragweed antigens.

On the other hand, Eisenbach-Schwartz et al are directed to dipeptides and pharmaceutical compositions containing a dipeptide for the modulation of immune responses, i.e., a humoral and/or cellular immune response, including, but not limited to, an immune response accompanying inflammation associated with or caused by disease (column 1, lines 37-44). While Eisenbach-Schwartz et al briefly indicate that the peptides, peptide derivatives and compositions may also be useful to treat or ameliorate inflammation associated with, among other things, allergic reactions (column 5, line 22 and column 11, line 25), Applicants find no teaching or suggestion by Eisenbach-Schwartz et al relating to birch pollen antigens. In fact, the allergic reaction exemplified by Eisenbach-Schwartz et al, namely allergic

encephalitis, used as an animal model for multiple sclerosis, is significantly distinguishable from the Bet v 1 protein allergen from which the immunogen defined by claim 28 is derived. Applicants find no teaching or suggestion by Eisenbach-Schwartz et al which would lead one of ordinary skill in the art to combine any of the Eisenbach-Schwartz et al teachings with either Patterson et al or Ferreira et al, particularly in order to form an immunogen as defined by claim 28.

In making a rejection under 35 U.S.C. §103, the Examiner cannot pick and choose among the individual elements of assorted prior art references to recreate the claimed invention; rather the Examiner has the burden to show some teaching or suggestion in the references to support their use in the particular claimed combination, *Smith-Kline Diagnostics, Inc. v. Helena Laboratories Corp.*, 8 U.S.P.Q. 2d 1468, 1475 (Fed. Cir. 1988). Neither the teachings of Patterson et al, specific to ragweed antigens, nor the dipeptide teachings of Eisenbach-Schwartz et al provide any teaching or suggestion for modifying the teachings of Ferreira et al to arrive at the immunogen defined by claim 28. Accordingly, the combination of Ferreira et al, Patterson et al and Eisenbach-Schwartz et al does not render the immunogen defined by claim 28 obvious to one of ordinary skill in the art. It is therefore submitted that claim 28, and claims 30 and 31 dependent thereon, are nonobvious over and patentably distinguishable from the cited combination of Ferreira et al, Patterson et al and Eisenbach-Schwartz et al, whereby the rejection under 35 U.S.C. §103 has been overcome. Reconsideration is respectfully requested.

It is believed that the above represents a complete response to the rejection under 35 U.S.C. §103, and places the present application in condition for allowance. Reconsideration and an early allowance are respectfully requested.

Respectfully submitted,

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